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# ***FORT CARSON 2006 SUSTAINABILITY REPORT***



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Sustainability Report.***

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*Report printed on recycle-content paper*



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## The 2006 Report

The 2006 Fort Carson Sustainability Report provides a snapshot of where we are on our path to sustainability. Updates on our 25-year goal initiatives are presented, including information on the challenges we face in accomplishing future initiatives that will help us meet our goals.

## Sustainability Goals

1. Sustain all facility and mobility systems from renewable sources, and reduce the total water purchased from outside sources by 75 percent.
2. Reduce automobile dependency and provide balanced land use and transportation systems.
3. Improve communication to foster understanding and attain a "Community of One."

4. Enhance partnering to collaboratively develop, integrate and implement regional sustainability.

5. Reduce the total weight of hazardous air pollutant emissions to zero.

6. Further integrate sustainability principles into the Fort Carson land use planning, Real Property Master Planning, and Military Construction, Army (MCA) programming processes.

7. All applicable facilities at Fort Carson will be high performance buildings that meet or surpass the Platinum Standard of SPiRiT or LEED.

8. Key stakeholder groups are trained, compliant and motivated toward sustainability principles.

9. All Department of Defense (DOD) and Fort Carson procurement actions support sustainability.

10. The total weight of solid and hazardous waste disposed of is reduced to zero.

11. Training Ranges (land and associated air space used for live fire ranges, maneuver, testing and development designated for Military Operations in Urban Terrain training) capable of supporting current and future military training to standard.

12. Advance a sustainable mission and Fort Carson by adopting a Sustainability and Environmental Management System (SEMS) and by imparting (passing on) a personal commitment and enthusiasm for sustainability.

For more information:

Fort Carson's SEMS web site – <http://sems.carson.army.mil>

The Army's sustainability web site – <http://www.sustainability.army.mil/index.htm>



**Goal 1: Sustain all facility and mobility systems from renewable sources, and reduce the total water purchased from outside sources by 75 percent.**

Energy demands are on the rise nationally. The Pikes Peak Region is no exception with a growing population, which includes the arrival of more Soldiers and their families to Fort Carson.

According to Colorado Springs Utilities, energy prices in 2010 are expected to be higher than 2005 as follows: electricity 22.4 percent higher, natural gas 11.9 percent higher, water 32.3 percent higher and wastewater 37.5 percent. The increased cost for energy spurs the need for sustainable action.

Fort Carson is in its second year of a five-year contract to purchase 40,000 MWh/year worth of Renewable Energy Certificates (REC) from wind and biomass energy through the Western Area Power Administration. The REC purchase accounts for 28 percent of Fort Carson's electrical use. The REC purchase garnered Fort Carson fifth place on the EPA's first list of Top 10 Federal Green Power Partners in June and September 2006.

A transpired solar collector wall was installed at Bldg. 8030, a large motor pool, to preheat heating system intake air and reduce natural gas consumption. The project will save an estimated \$25,000 to \$35,000

per year in natural gas consumption.

An Energy Savings Performance Contractor was selected to start work in FY06. The contractor will identify Installation-wide Energy Saving Cost Measures. Subsequent energy saving projects should result from this contract.

Combined energy initiatives for FY06 saved the Installation approximately \$1 million.

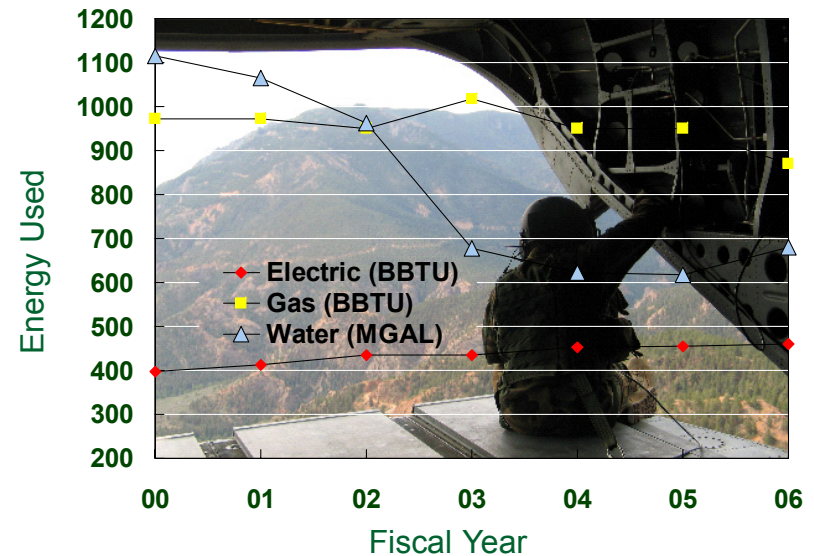
***Future initiatives planned:***

☞ Implement the FY07 Energy Conservation Investment Program funded projects and other utility upgrade projects, which save energy and money. Identified projects include the expansion of the Energy Management Control System to 14 additional facilities and the replacement of 30 aging and inefficient boilers.

☞ Construct a two mega watt solar photovoltaic (PV) plant on Fort Carson. This landmark solar energy project will be the largest PV solar array in the Army. Fort Carson will purchase the power and the contractor will purchase the RECs. The project completion is expected by October 2007.

☞ Investigate wind resource opportunities on Fort Carson through partnerships with the Department of Energy and continuing discussions with key stakeholders.

**Fort Carson Utility Consumption**



Since 2000, Fort Carson reduced natural gas use by 2.5 percent and total water use by 45 percent despite an increase of more than one million square feet of new construction. During this same time frame, electricity use increased 15 percent.

***Challenges :***

☞ Acquiring first cost funding for energy projects regardless of life-cycle or payback costs.

☞ Calculating and defending life-cycle analysis for energy projects.

***Questions for community stakeholders:***

☞ How can Fort Carson influence development of regional, collaborative renewable energy or demonstration projects?

☞ How can Fort Carson increase incorporation of xeriscaping and low-impact development techniques in new construction and redevelopment?



Fort Carson opened a contractor-owned/contractor-operated retail fuel point in August 2006 that sells E-85 fuel.

## Goal 2: Reduce automobile dependency and provide balanced land use and transportation systems.

The impact of increasing traffic congestion and transportation needs are growing concerns for Fort Carson and the Pikes Peak Region. The Installation is pursuing long-range strategies to not only address the near-term growth, but also plan for future transportation requirements.

This year, Installation entry gate projects were initiated to accommodate pedestrian and bicycle traffic. When completed, these modifications will improve traffic safety and encourage the use of these alternate modes of transportation.

Efforts were also begun to add extra approach lanes to Gates 4 and 20 to decrease fuel wasted by excessive idling while waiting to enter Fort Carson and to improve overall traffic flow.

To improve traffic flow, one of the main north-to-south roads on Fort Carson is being realigned and widened. This improvement will also reduce

fuel wasted by excessive idling while waiting to exit Fort Carson.

An increased speed limit and the elimination of road closures for physical training, has improved traffic flow along a major thoroughfare, Magrath Avenue, and ended the need for drivers to take a longer route to work

during morning commutes.

An E-85 fuel pump was installed in August 2006 at the contractor-owned, contractor-operated fuel facility on Fort Carson to allow alternate fuel vehicles to use the less polluting E-85 fuel. Previously, the E-85 fuel was only available from a remote off-site location. The E-85-capable General Services Administration (GSA) vehicles on the Installation are required to use E-85 fuel rather than regular petroleum-based fuel.

A Post Shuttle Bus service was started in April 2006. Unfortunately, due to severe budget constraints placed on the Installation, the service was one of the first services discontinued to save money and due to limited ridership. The Post Shuttle Bus service ended in June 2006.

### *Future initiatives planned:*

➤ Improve and widen selected on-post roadways to enhance traffic flow and better support

alternate modes of transportation such as bicycle, mass transit and pedestrian travel.

➤ Reinstate a Post Shuttle Bus service as soon as funding allows.

➤ Explore the possibilities of a shared bicycle, program to encourage the use of bicycles for short trips on the Installation.

### *Challenges:*

➤ Installation security must be considered in allowing access to all parts of the Installation; safety is also a factor for bicyclists and pedestrians when competing for roadway clearance and access to gates.

➤ While it burns cleaner, the E-85 fuel costs more than unleaded fuel. The Installation must quantify air emissions savings to justify the higher expense of E-85.

### *Questions for community stakeholders:*

➤ How can Fort Carson improve or supplement the current city Metrobus service to increase ridership to and from Fort Carson?

➤ How can Fort Carson better influence regional infrastructure development that supports multiple modes of transportation on and around Post?

➤ Would you consider riding a bicycle for transportation to/from work? If not, how could Fort Carson improve safety and overall bikeability on and off Post?



### Goal 3: Improve communication to foster understanding and attain a “Community of One.”

Ensuring the local community understands the unique challenges Fort Carson Soldiers and families face, can create a more integrated and harmonious place for everyone to live. Fort Carson works hard to be transparent about living and working inside the boundaries of the Installation and actively seeks input from the surrounding community. Community support continues to be considered the best in the Army for Soldiers and their families.

A Citizens Soldier Connection Program was created in 2006 to connect Fort Carson Soldiers and their families with volunteer citizens in the community for the purpose of providing a local support network. The organization matches Soldiers and their family members with off-post community citizens and families in order to: connect Soldiers with Colorado Springs/Pueblo community members; create positive off-duty interactions for all participants; and develop potentially enduring relationships. To date, 300 matches have been made.

Fort Carson conducted a “Live Chat” online with Fort Carson’s Commanding General to provide a forum for Soldiers, family members, Department of Defense civilians and members of the public to speak to the Commanding General and ask him questions.

The Public Affairs staff ensures events and issues on Fort Carson are reported to the media in a prompt and open manner.

They also are heavily tasked and in demand to provide support for community events. As of August 2006, the Fort Carson Public Affairs staff:

- ☞ Prepared 78 news releases.
- ☞ Facilitated 135 media events to include CBS news coverage of Post Traumatic Stress Disorder encountered by Soldiers returning from war.
- ☞ Supported more than 180 Fort Carson and Colorado Springs community events including tours, Mounted Color Guard appearances, Harmony in Motion performances and ceremonial duties on Fort Carson.

#### *Future initiative planned:*

- ☞ Constructing the Mountain Post Historical Museum outside of Fort Carson Gate 1 off of Hwy. 115. It will feature a Visitor’s Orientation Center; multiple exhibit galleries highlighting specific aspects of military history as they relate to Fort Carson; indoor and outdoor education programs; a Soldier’s memorial, a museum store, dining areas; and a multi-use space available for groups. The museum, which will be open to the public, is being funded through donations and will be constructed on Army-owned land. The museum is slated for opening in 2009 (for more information [www.fortcarsonmuseum.com](http://www.fortcarsonmuseum.com)).

#### *Challenges:*

- ☞ The deployment of Soldiers in public affairs duties in support of operational requirements makes it difficult to maintain sufficient Public Affairs Office staff. Soon the



Fort Carson commanding general, Maj. Gen. Robert W. Mixon Jr., unveils a puzzle of the design for the new Fort Carson Mountain Post Historical Center.

Public Affairs Office will lose its last Soldier and has not received any of the projected civilian staff to backfill positions.

- ☞ Keeping the public informed of all the changes occurring on Fort Carson that may impact the local community.

#### *Questions for community stakeholders:*

- ☞ How can Fort Carson be more transparent and accountable in its communication with the public?
- ☞ How can Fort Carson better communicate with and involve stakeholders in order to gain added commitment to sustainability goals?

## Goal 4: Enhance partnering to collaboratively develop, integrate and implement regional sustainability.

Partnering with organizations outside the fenceline is becoming an increasingly crucial part of Fort Carson's ability to prepare Soldiers and military units for deployments, while embracing sustainability.

In partnership with the Pikes Peak Area Council of Governments (PPACG), the Fort Carson-initiated Pikes Peak Sustainability Indicators Project was integrated with the Base Realignment and Closure (BRAC) planning process. The indicators project will continue to involve counties, municipalities and other stakeholders to track long-term trends for select quality of life measures. Measures or indicators will be used to objectively determine whether we're performing regionally in a sustainable way. The region will then partner, collaborate and coordinate strategies and initiatives if an improving trend is desired.

This "Fort Carson Regional Growth Coordination Plan" will help local governments with coordination and technical expertise, by providing a person dedicated to regional and local indicators development. Fort Carson will continue to participate in the project in an advisory capacity, and will provide ongoing assistance to the El Paso County United Way, which is currently developing a quality of life indicators project for the county that can serve as a model for the other three counties in the region.

Fort Carson and the University of Colorado at Colorado Springs (UCCS) initiated a unique partnership in FY06 to collaborate on projects that support sustainability progress in each

organization. UCCS is pursuing development of a Sustainability major of study, as well the integration of sustainability concepts for its development and operations.

Fort Carson continues to spread the word about its sustainability leadership and initiatives through presentations to national and local events, including Earth Day 2006, the Joint Services Environmental Management conference, the EPA Excellence in Governance conference, the EPA WasteWise 2006 conference, the International Facility Management Association national conference and to university classes at The Colorado College, University of Colorado at Colorado Springs and University of Colorado at Boulder.

### *Future initiatives planned:*

- ✎ Launch a partnership approach to sustainable energy planning for the Pikes Peak region; expected partners include other military installations, energy utilities, non-profit energy organizations and local governments.
- ✎ Initiate business training partnerships with regional chambers of commerce.
- ✎ Develop other economic development



Partnership efforts are furthered each year during Fort Carson Community Sustainability Conferences.

initiatives with government and the private sector entities.

### *Challenge:*

✎ As a regional and national leader in sustainability, Fort Carson's primary challenge is finding partners, particularly in the government sector, that are ready to embrace sustainability goals. Citizen, business and local leader participation in sustainability events and their advocacy with local governments for a more sustainable future is essential to support Fort Carson's goals and the sustainability initiatives of the numerous organizations in the region.

### *Questions for community stakeholders:*

- ✎ How can Fort Carson partner with you to achieve mutual benefit and sustainability?
- ✎ How can Fort Carson better inform and interact with the community to achieve objectives and regional sustainability?

### Goal 5: The total weight of hazardous air pollutant (HAP) emissions is reduced to zero.

Air quality impacts generated by Fort Carson have been an ongoing issue. The Installation works aggressively to minimize by adopting new technologies, purchasing less HAP-emitting/environmentally preferable products and educating people on and off the Installation about air pollution issues.

The U.S. Environmental Protection Agency refers to HAPs as those chemicals that pose serious health and environmental hazards. Sources that generate HAPs on Fort Carson include gasoline dispensing, dry cleaning operations, paint shops, boilers and generators.

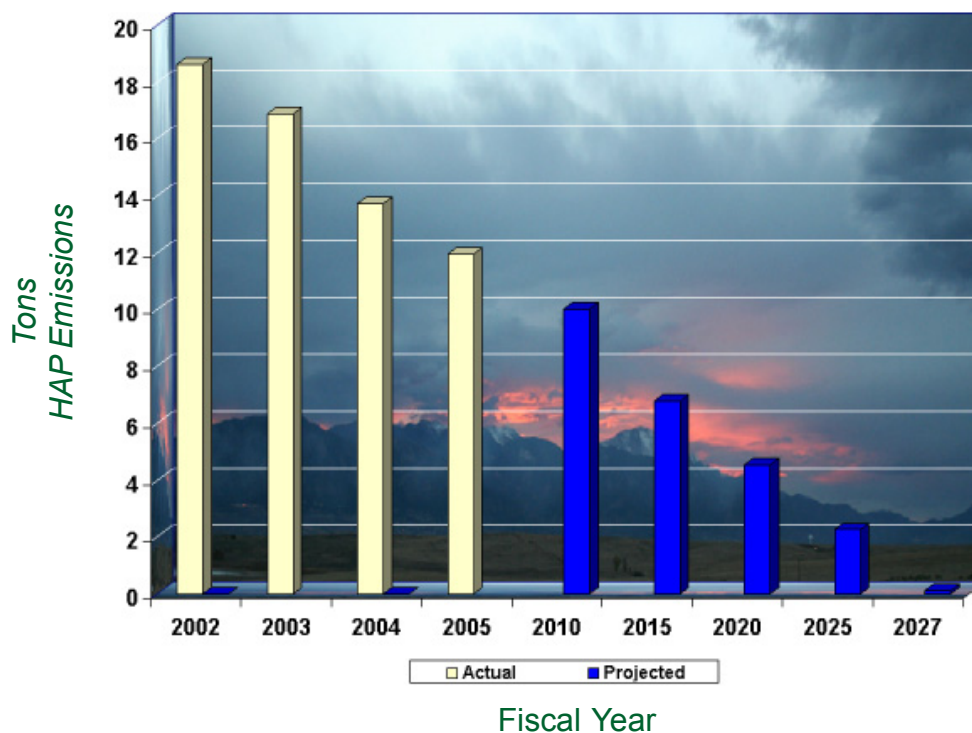
In April 2006, two Fort Carson paint booth operators were sent to the Iowa Waste Reduction Center's Spray Technique Analysis and Research for Defense April 2006. The paint course is designed to increase painting efficiency, teach new techniques/technology and to educate operators on reducing air emissions and provide a healthier work place.

A new state-of-the art paint booth was funded for construction in FY06. The new booth will help decrease paint overspray and paint use, which will reduce emissions.

#### *Future initiatives planned:*

- ☞ Purchase air-assisted, airless spray-guns to reduce paint usage/over spraying and increase painting efficiency.

### *HAP Actual Emissions*



- ☞ Analyze all solvents used at paint booths on Fort Carson and recommend replacing with HAP-free solvent and low-vapor pressure solvents to reduce volatile organic compounds (VOCs).

- ☞ Explore VOC reduction through paint/adhesive reformulation. All Chemical Agent Resistant Coatings (CARC) and conventional coatings can be formulated to reduce VOCs and HAPs.

#### *Challenges:*

- ☞ Alternative processes are slow to be approved.
- ☞ Overcoming the perception that alternative products perform poorly compared to traditional products.

- ☞ Providing consistent air emission/air program requirement awareness training to an increasing number of troops and high personnel turn over.

- ☞ Waterborne traffic striping paint was not durable and created economic and safety issues.

#### *Questions for community stakeholders:*

- ☞ How can Fort Carson decrease or eliminate HAPs and other pollutants from existing stationary sources through new technologies or improving best management practices?

- ☞ How can Fort Carson influence HAP reductions in Army and community operations?





This digital image shows existing and proposed facilities as part of the Fort Carson “Town Center” concept in development.

## Goal 6: Further integrate sustainability principles into the Fort Carson land use planning, Real Property Master Planning and Military Construction, Army (MCA) programming processes.

Fort Carson faces a monumental challenge in the next few years with the stationing of new military units, Soldiers, and their families to the Mountain Post as part of the BRAC actions within the Army. With this increase in population, many new facilities will be constructed.

The future development of Fort Carson in a sustainable way includes: building on

land adjacent to existing facilities; providing more housing and transportation choices; preserving training areas and critical natural areas; and developing vibrant places to live, work, shop and play. In addition, Fort Carson smart growth principles and strategies will also protect the quality of our air, water and land.

Several examples of new facility locations show how built up areas are being reused. The new Brigade complex of barracks, operational facilities and motor pools is being constructed at the southern end of the cantonment area adjacent to existing troop areas and small arms ranges.

The new 4<sup>th</sup> Infantry Division headquarters is planned for the area south of the existing Fort Carson headquarters building, within walking distance to several support facilities and Installation administrative areas.

The “Town Center” concept continues to gain momentum. Current conceptual plans show a build out of the area from the Post Exchange to the Commissary with a main street that connects these two facilities. Retail, housing, office space, recreational facilities, medical facilities, and other types of support facilities have been considered in the early stages of this planning effort. As a key partner, the Army and Air Force Exchange Service is studying the “Town Center” concept at Fort Carson to determine its economic possibilities.

To accommodate the rapid growth of Fort

Carson, the master planning staff increased to three full-time personnel to support the integration of sustainability into the master planning process.

### *Future initiatives planned:*

- ✎ Develop the “Town Center” concept into an approved development plan for Fort Carson that will enhance quality of life, provide for a healthier lifestyle and set the standard for both military installations and the surrounding communities.
- ✎ Adopt sustainable siting criteria to be used in all future facility siting plans on Fort Carson.
- ✎ Establish monthly Real Property Planning Board working group meetings in order to share master planning information and work new facility requirements in an open, regularly-scheduled fashion.

### *Challenges :*

- ✎ Satisfying short-term, major construction requirements that benefit longer-term, sustainable development without a definitive master plan.
- ✎ Focus on deliberate, long-range planning instead of more immediate construction.

### *Questions for community stakeholders:*

- ✎ How can Fort Carson institutionalize a master planning process that better integrates sustainable development?
- ✎ How can Fort Carson and the region better develop or redevelop to allow multiple modes of transportation, increase density and conserve open space?

**Goal 7: All applicable facilities at Fort Carson will be high performance buildings that meet or surpass the Platinum Standard of the Sustainable Project Rating Tool (SPiRiT) or Leadership in Energy and Environmental Design (LEED) rating.**

An eye toward sustainable construction is critical during the period of rapid growth Fort Carson is facing. With more troops, comes the need to upgrade existing and build new facilities to accommodate their arrival. Fort Carson has taken the challenge of growth as an opportunity to implement more sustainable construction practices.

The Army and Fort Carson have adopted policies in support of sustainable design and development. Starting in FY08, the Army will require all new military vertical building construction achieve the Silver level of LEED for new construction. Horizontal construction, to include roads, ranges, etc., are to incorporate sustainable design and development features where feasible.

This year, the Army and Fort Carson established a minimum diversion rate of 50 percent from landfills for all construction and debris materials on new construction, renovation and demolition projects.

More than 80 percent of the construction debris (by weight) from the recently completed “rolling pin” barracks renovation project was diverted from going to a landfill through recycling and reuse efforts.



Fort Carson is nearing completion on its medical barracks. The facility is designed for a LEED Gold rating.

To aid in water conservation efforts, the Army designated the use of waterless urinals as standard in all new construction projects and major repairs. This change is to be incorporated into the Army’s Installation Design Standards, which provides the mandatory common facility and infrastructure standards for all installations.

Fort Carson is also designing sustainability into its construction and renovation projects. Fourteen existing “rolling pin” (construction similar to a rolling pin) barracks were completely remodeled to meet the SPiRiT Bronze rating and the Army one-plus-one standard (one soldier per bedroom in a module with two bedrooms and a common kitchenette and latrine). Individual climate control, reuse of buildings and associated infrastructure are a few reasons the renovated barracks are considered sustainable facilities.

The new U.S. Army Medical Department Activity (MEDDAC) barracks is a SPiRiT Gold-rated facility. The barracks is located next to Evans Army Community Hospital so Soldiers can walk to work. Additional sustainable features include the orientation of the building, which maximizes solar gain and water savings fixtures.

***Future initiatives planned:***

➤ Upgrade the Fort Carson Installation Design Guide (IDG) to incorporate sustainable design and construction standards to a greater degree.

➤ Incorporate sustainability requirements into all contracting documents issued by Fort Carson for design and construction. Require sustainability expertise on all contracted design teams.

***Challenges:***

➤ Educate staff and customers on sustainable design and construction.

➤ Capital to support higher first cost of sustainable construction in order to achieve life-cycle savings.

***Questions for community stakeholders:***

➤ How can Fort Carson better achieve and drive innovative thinking in future facility designs and retrofits that will help us achieve performance in other goal areas?

➤ How can Fort Carson influence Army leadership, policy and procedures to fully use life-cycle assessment/costing in programming, budgeting and funding processes?





School children celebrated Earth Day by planting trees and participating in various educational activities.

### **Goal 8: Key stakeholder groups are trained, compliant and motivated toward sustainability principles.**

Education is the key to accepting and acting on new and seemingly difficult ideas and concepts. Training has been and will continue to be implemented at Fort Carson until sustainability becomes a habit.

Everyone on Fort Carson and in the surrounding communities can impact the region's sustainability in both large and small ways. Awareness training has brought this fact to the forefront, and now further steps are being implemented to ensure a steady incorporation of sustainability principles.

The Competence Training, part of Fort Carson's Sustainability and Environmental Management System (SEMS), consists of engaging learning modules and hands-on exercises. It is designed to take the trainee further

in his or her awareness of the SEMS and Fort Carson's sustainability goals. Training has begun, with directorates and units ensuring decision-makers thoroughly understand their collective and individual responsibilities in reference to the SEMS.

The annual Fort Carson Community Sustainability Conference continues to grow. From its beginning in 2002 with about 240 attendees, the conference

has now grown to an attendance more than 350 military and civilian community members. Attendees learn about sustainability efforts in the region. This year's conference is expanded to include a sustainable technology expo.

A survey of Fort Carson's sustainability program was distributed in the Fall of 2005 to individuals from Fort Carson, the community of Colorado Springs, and the state of Colorado. Results of the survey indicate that Fort Carson's sustainability efforts are moving ahead successfully and are becoming more integrated into the day-to-day culture of Fort Carson. While Fort Carson is experiencing some of the "organizational holdup" that many new initiatives encounter, the strengths of the efforts have laid a solid foundation for future success.

Fort Carson continues to interact with the community and deliver the message of sustainability through speaking engagements and at various events. For example, the Colorado Alliance for Environmental Education hosted sustainability training for its Colorado Springs members. Information on Fort Carson's SEMS, along with ideas for inserting sustainability

principles into an environmental education curriculum were presented.

First Annual Pikes Peak Earth Day celebration in downtown Colorado Springs presented an opportunity for Fort Carson to engage the community about its sustainability efforts.

### ***Future initiatives planned:***

➤ Increase the number of trained stakeholders off the Installation. A community stakeholder sustainability training event is planned as part of this year's conference.

➤ Increase participation in Fort Carson's SEMS and regional sustainability goals through incentive programs both on and off the Post.

### ***Challenges:***

➤ With Army transformation and BRAC directives underway, a major challenge has been identifying positions and personnel requiring SEMS Competence Training on the Installation, and ensuring that these individuals have the support and information they need to carry out SEMS duties after training is complete.

➤ Efforts to determine the effectiveness of training, given the transient nature of military life and lack of funds to install a user-friendly monitoring system, have returned mixed results.

### ***Questions for community stakeholders:***

➤ How can Fort Carson more successfully provide training to its constantly changing customers and stakeholders?

➤ How can Fort Carson leverage opportunities in the community to provide sustainability training?



Energy Star efficient washers have been purchased for several barracks.

### **Goal 9: All Department of Defense (DOD) and Fort Carson procurement actions support sustainability.**

Fort Carson has a number of goals that tie to environmentally-preferable purchasing and has initiatives to move beyond basic federal purchasing requirements.

In 2004, DOD affirmed a goal of 100 percent compliance with federal laws and executive orders requiring environmentally-preferable purchases of products and services.

One way Fort Carson is putting its purchasing power to sustainable use, is by investing in more energy-efficient, high-quality washers in Soldiers' barracks. The Directorate of Logistics purchased 224 Energy Star qualified washers for the 14 newly-renovated rolling pin barracks. The front-loading washers installed at the barracks use less water and energy and have had virtually no maintenance costs to date.

The Directorate of Contracting conducts monthly Government Purchase Card training, which included a focus on card holders buying environmentally-friendly products and services. The card holder and billing official training has been expanded to include weekly refresher courses which discuss "green" purchasing.

The Installation supply store operated by a contractor, Envision, has arranged specially designated in-store displays of items to help purchase card customers more easily identify eco-friendly items.

Fort Carson Directorate of Contracting Army Contracting Agency staff received instruction and training on purchasing "green" products following procedures established in the Federal Acquisition Regulations.

#### ***Future initiatives planned:***

- ✎ Ongoing training of acquisition professionals in the area of procuring sustainable products and services.
- ✎ Identification of all acquisition offices that

write contracts for supplies and services being used on the Fort Carson installation.

- ✎ Provide more information on the Fort Carson Directorate of Contracting Army Contracting Agency's web site about the opportunities and benefits of purchasing environmentally-friendly goods and services.

#### ***Challenge:***

- ✎ The Army's limited financial resources make it difficult for contracting professionals to spend sufficient time compiling market research identifying all possible opportunities for the acquisition of "green" items.

#### ***Questions for community stakeholders:***

- ✎ How can Fort Carson encourage manufacturers and service suppliers to provide more environmentally-friendly products and service particularly in the area of vehicle rental agencies that contract with Fort Carson?
- ✎ How can government personnel assist local suppliers and providers in their efforts to be more sustainable?
- ✎ How can Fort Carson and the community attract and retain the "right" mix or combination of businesses that support sustainability concepts, military and existing business needs? (The "right" combinations being businesses that supply products and services to each other without extensive transportation requirements, one business uses another's waste, they meet economic development needs, etc.)



## Goal 10: The total weight of solid and hazardous waste disposed of is reduced to zero by 2027.

Solid waste reduction efforts gained traction in 2006 through the implementation of new reduction and recycling initiatives. Fort Carson is striving to meet the Department of the Army's sustainable management of waste policy in military construction, renovation and demolition activities established in 2006. The policy requires a minimum of 50 percent diversion of waste, by weight, from these activities.

The Installation is diverting large quantities of construction debris/pallet wood (about 40 tons per month) from going to a landfill by providing them to a contractor to support a waste-to-energy project being conducted by Colorado Springs Utilities or by turning the waste to mulch.

Through increased customer awareness and placement of additional collection containers, the Installation aggressively improved recycling rates from 30 to 42 percent (recycled weights went from 3,000 to 4,843 tons) over the past year.

A manned Recycle Point was initiated at a major recycling location to help with on the spot education, awareness and separation of commodities. This has resulted in a cleaner recycling area and proper waste disposal eliminating the need to sort waste from material brought for recycling.

Combined solid waste reduction initiatives for FY06 saved Fort Carson \$500,000. The wood diversion initiative alone saves the Installation



Every month approximately 40 tons of wood from construction debris, old furniture and packing material is diverted from landfill disposal.

\$2,500 per month and the increased landfill diversion rate saved \$115,000 last year.

### *Future initiatives planned:*

- ✎ Investigate and implement cost-effective organic recycling (wood, food, sludges, etc.) through programs such as composting or waste to energy.
- ✎ Further discussions with U.S. Forest Service concerning potential biomass plant opportunities.
- ✎ Contract to recycle plastic and garnet bead blast media used to strip paint from military vehicles, which is one of the largest hazardous waste streams left on the Installation.
- ✎ Pursue an opportunity to divert waste tires for recycling or for waste-to-energy use.
- ✎ Perform waste studies on characterization or

local partnering opportunities and waste diversion technologies.

### *Challenges :*

- ✎ The recycle program's biggest challenge is in providing education and awareness about good recycling practices to the Fort Carson community.
- ✎ Identify new, low-cost waste-reduction projects.

### *Questions for community stakeholders:*

- ✎ How can you and Fort Carson influence product durability, reduced product packaging and reuse opportunities that prevent waste?
- ✎ How can you and Fort Carson make valuable commodities out of traditional "waste"?
- ✎ How can Fort Carson and the community in partnership leverage resources to make "zero waste" a reality?



Maintaining training ranges aids mission accomplishment and sustains the land.

**Goal 11: Training Ranges (land and associated air space used for live fire ranges, maneuver, testing and urban development designated for Military Operations in Urban Terrain training) capable of supporting current and future military training to standard.**

Fort Carson has long been a proactive steward of the environment while ensuring training Soldiers and military units on its ranges and at the Pinon Canyon Maneuver Site (PCMS) in southeastern Colorado. Sustaining land for training while ensuring the safety of Soldiers and staying in compliance with local, state and federal regulations and statutes requires a great deal of coordination.

***Army Compatible Use Buffer (ACUB)***

Fort Carson initiated several projects to offset encroachment on training lands. As of 2006, Fort Carson in partnership with The Nature Conservancy (TNC) has funded acquisition of several conservation leases on

56,000 acres of private land and acquired permanent conservation easements on 12,000 acres on the Installation's southern and eastern boundary.

In partnership with El Paso County and TNC, a 15-parcel acquisition of five-acre, undeveloped lots in the El Rancho Development on its eastern boundary was completed and acquisition of 44 additional El Rancho parcels was initiated.

***Cultural Resources Management***

Cultural resources work in support of sustainable training ranges included archaeological inventory of an additional 15,000 acres on the PCMS and 3,000 acres on Fort Carson, as well as evaluative testing/mitigation of five sites and continuation of a site re-evaluation project to facilitate the opening of additional land for military training. This work was conducted in conjunction with specific Fort Carson projects, i.e. fiber optic and utility line placement, new military equipment testing areas, etc.

***Wildlife Management***

An antelope fawn survivability study was started at PCMS to compare data collected during the past 21 years of military training operations on PCMS. A DOD Legacy Project on burrowing owls, a Colorado listed species, was initiated at PCMS, identifying 30 nesting pairs and banding young.

***Army Training Ranges***

Fort Carson is working on enhanced erosion control dam projects through the Integrated Training Area Management Program. The projects will enhance the resource stewardship and changing value of the entire area.

Range barrier lights are being replaced with

photovoltaic (solar) powered lights, which will reduce Soldier labor roughly two hours per day spent replacing barrier light batteries. The photovoltaic-powered range barrier lights will save roughly \$1,200 in batteries per year.

***Future initiatives planned:***

- Continue to acquire buffer lands through conservation easements and complete acquisition of El Rancho parcels.
- Research new technologies and methods for detecting archaeologically sensitive areas by the military during training missions and develop a more cost-effective, less environmentally-invasive system of site identification and protection.
- Establish a range target material and Class IV (concertina wire, metal) recycle point adjacent to Range Control to collect used targets (wood, plastic and metal) for recycling.

***Challenges:***

- Primary challenge of the ACUB program is acquiring the funding for conservation easements.
- Accommodating newer, advanced weapon systems within the training space land available.

***Questions for community stakeholders:***

- How can Fort Carson better predict and plan for emerging national security threats and military training needs 25-50 years from now?
- How can Fort Carson respond to changing mission, weapons and maneuver training requirements within existing resources and constraints?





Soldiers and civilians receive comprehensive environmental and SEMS training when they arrive at Fort Carson.

### **Goal 12: Advance a sustainable mission and Fort Carson by adopting a SEMS and by imparting (passing on) a personal commitment and enthusiasm for sustainability.**

All Army installations are required to have an environmental management system, which is a tool for managing and improving environmental performance.

Fort Carson has taken this requirement a step further by integrating sustainability into its EMS to make an SEMS – Sustainability and Environmental Management System. The SEMS will ensure that Fort Carson manages its impacts on the environment and community through achievement of its 12 sustainability goals.

Fort Carson met Department of the Army milestones for its SEMS implementation in 2005. In 2006, the main SEMS efforts are updating goal objectives and targets, developing and conducting awareness and competency training and performing an internal audit.

Awareness training is important to achieving understanding across the installation of why and how Fort Carson sustainability goals are

tackled. From January through October 2006, more than 1,400 Soldiers and 280 newly assigned civilian employees have received SEMS Awareness Training.

The next level of SEMS education is competence training, which was launched in summer 2006. It is expected that all people on Fort Carson with management responsibilities that directly impact sustainability issues will train from September through December 2006.

The competence training takes awareness training to a higher level, guiding decision-makers to the correct course of action in their activities to advance sustainable practices and behavior.

### ***Future initiatives planned:***

- ✎ Finalize and update SEMS procedures as required for full conformance with ISO 14001 by December 2007, which is two years in advance of Army requirements.
- ✎ Conduct surveys of individuals, organizations and contractors working with Fort Carson to determine their level of commitment and enthusiasm for sustainability.
- ✎ Update job descriptions and performance evaluation forms to better integrate responsibility and accountability for sustainability and environmental performance in Fort Carson systems and processes.

### ***Challenges:***

- ✎ Integration and alignment of the sustainability program and SEMS with Fort Carson planning and project implementation .
- ✎ Achieving cultural change and the momentum to create lasting, systematic change in the way we do business.

### ***Questions for community stakeholders:***

- ✎ How can Fort Carson's leaders and managers commitment and efforts to the sustainability goals be made more visible to constituents?
- ✎ How can we gain irreversible momentum toward sustainability even though leaders come and go?

## Notes



## Notes

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For more information about Fort Carson's Sustainability program, call (719) 526-6210 or visit the Fort Carson sustainability web site at <http://sems.carson.army.mil>.